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A. P. LOW, DEPUTY HEAD AND DIRECTOR

NOTES

ON THE

FOSSIL CORALS

COLLECTED BY MR. A. P. LOW

AT

BEECHEY ISLAND, SOUTHAMPTON ISLAND AND CAPE CHIDLEY IN 1904

BY

LAWRENCE M. LAMBE, F.R.S.C.

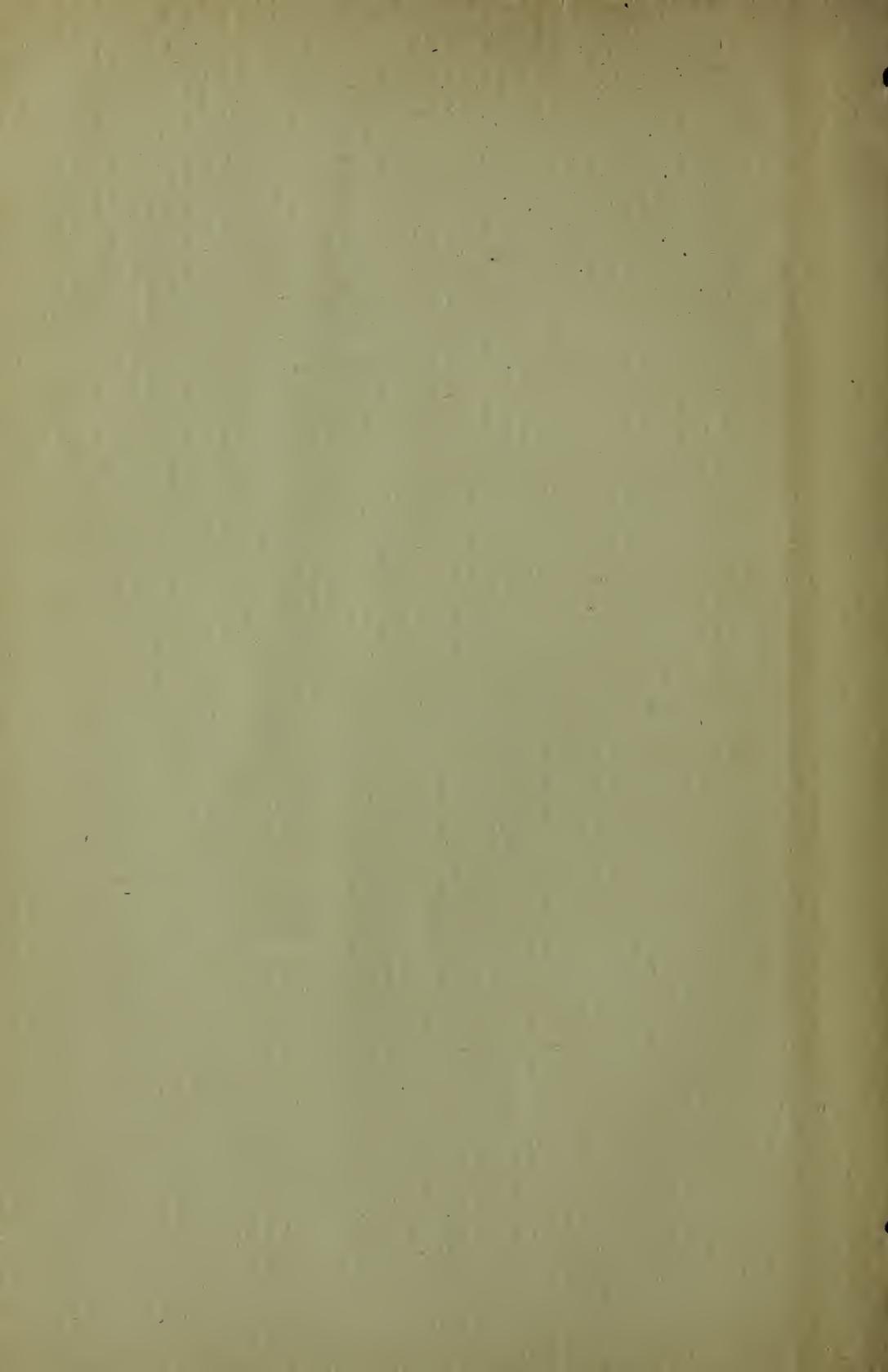
*(Being a reprint from Appendix to Mr. Low's
Report on "The Cruise of the 'Neptune'")*



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NOTES ON THE FOSSIL CORALS COLLECTED BY MR. A. P. LOW AT BEECHEY ISLAND, SOUTHAMPTON ISLAND AND CAPE CHIDLEY, IN 1904.
(By Lawrence M. Lambe, F.G.S., F.R.S.C.)

BEECHEY ISLAND, LANCASTER SOUND.

Acervularia austini (Salter), 1852. Sutherland's voyage*, appendix, p. ccxxx, *Strephodes*? Austini, pl. 6, figs. 6, 6a.

The type specimens of this species were obtained at Cornwallis, Beechey and Griffiths islands. A number of corals in Mr. Low's collection, from Beechey island, appear to belong to this species, judging from Salter's description and figures and those of Houghton in the Journal of the Royal Dublin Society, vol. 1, 1856-57 (1858), p. 246, pl. x., figs. 2, 2a.

In Mr. Low's specimens the inner structure is fairly well shown. The larger septa pass to the centre of the corallites where they are slightly twisted, and together with the arched, rather vesicular tabulae, form a definite central area that appears at the bottom of the cups as a more or less distinct boss. The septa (averaging from thirty to forty in number) bear arched carinae on their sides. The corallites are slightly larger than those of *A. gracilis*** (Billings), from Grand Manitoulin island, Lake Huron (Niagara group), otherwise the specimens could with equal propriety be referred to the Lake Huron species. The size of the corallites varies in *A. austini* from about 3 to 8 mm. in diameter, in Mr. Low's specimens up to about 10 mm. across, but in *A. gracilis* the corallites seldom reach a diameter of 7 mm. If by a direct comparison it is found that Mr. Low's specimens are without doubt properly referable to *A. austini*, and if it can be shown that the size of the corallites cannot be relied on as a specific character, then *A. gracilis* may have to be regarded as identical with *A. austini*.

The specimens of corals from Beechey island are not referable to any genus with which the writer is acquainted. In these specimens the structure is revealed, by weathering at the calicular surface and in horizontal and longitudinal sections, as well as in sections obtained

* Journal of a voyage in Baffin's bay and Barrow straits in the years 1850-1851 by Peter C. Sutherland, M.D., M.R.C.S.E., 1852.

** *Strombodes gracilis*. 1865 Geological Survey of Canada, Palaeozoic Fossils, vol. 1, p. 113, fig. 94, by E. Billings; and *Acervularia gracilis*, 1900, Contributions to Canadian Palaeontology, vol. IV, pt. II, pl. XIV, figs. 2, 2a, by Lawrence M. Lambe.

by rubbing down and polishing. As the writer is unable to place this coral, to his satisfaction, in any described genus, it is thought best to establish a new genus for its reception. The main generic characters are enumerated below with a brief description of the species which the writer has much pleasure in naming after Mr. Low.

Boreaster. Gen. nov.

Corallum composite, massive (or thickly incrusting), made up of intimately connected polygonal corallites communicating with each other by means of mural pores. Septa in the form of longitudinal lamellæ, twelve in number. Tabulæ simple.

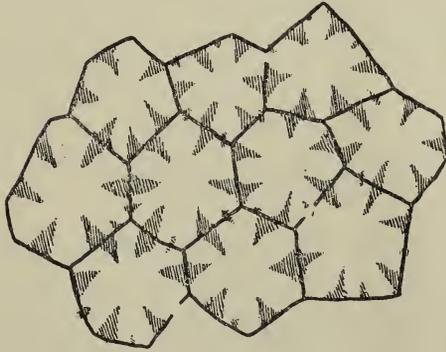
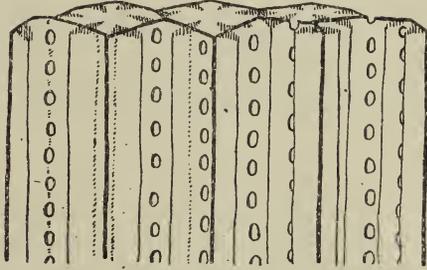
This genus resembles *Favosites* in having numerous pores in the walls of the corallites, but differs from it in the possession of lamellar septa somewhat similar to those of *Columnaria*, *Nyctopora* and *Lyopora*. From these three genera, however, *Boreaster* differs in having 12 septa only, of two alternating sizes, to a corallite. *Columnaria* and *Lyopora* are without mural pores. *Nyctopora* was described by Nicholson as having pores, but in well preserved specimens from the type locality, examined by the writer, mural pores were not seen; it possesses 16 septa of two orders. *Boreaster* and *Calapæcia* resemble each other in both having pores, but in the latter genus the corallites are not intimately united under any circumstances, and the septa are in the form of spine-bearing ridges.

This interesting coral may be conveniently grouped with the *Favositida*, as its generic affinities appear to place it close to *Calapæcia*.

Boreaster lowi. Sp. nov.

Corallum growing in irregularly shaped masses with an unevenly undulating surface; composed of small, polygonal corallites so closely united that all trace of the line of contact between contiguous walls is apparently lost. Corallites opening at right angles to the surface, averaging about .75 mm. in diameter and generally five or six sided, as seen in transverse section, the sides of the polygons being distinctly unequal. Walls of corallites thin but less so where they bound the calyces. Septa lamellar, apparently 12 in number, of two sizes, primary and secondary, alternating, the former stout and relatively large, the latter rudimentary and observed with difficulty, especially in the calyces where the six primary septa are paramountly evident, are slightly exsert and apparently connect with the nearest and corresponding ones of contiguous corallites. Pores relatively large, oval, their greater diameter vertical, in a single longitudinal row between

each pair of primary septa so as to interrupt the continuity of the secondary septa which are greatly reduced and in transverse sections



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are only observed in places. Tabulæ not numerous, in the form of simple, flat transverse diaphragms.

The two type specimens have a maximum length of 50 and 70 mm. with a thickness or height of 25 and 30 mm. respectively.

Favosites gothlandica, Lamarck.

There are three examples of this coral, of which two show spini-form septa in the corallites. The smaller of the two specimens, in which septa are seen, is preserved with a small corallum of *Acer-vularia austini* in the same piece of limestone.

The horizon indicated by the first and last of the above three species of corals from Beechey island would be about that of the Niagara formation.

SOUTHAMPTON ISLAND, HUDSON BAY.

Streptelasma robustum, Whiteaves.

This large and well marked species, described originally from the Galena-Trenton of the Lake Winnipeg region, is represented by a number of more or less fragmentary specimens. The inner structure is well shown in transverse and longitudinal sections.

Favosites gothlandica, Lamarek.

Over forty specimens from this locality are referable to this well known species. In many of them are seen the spiniform septa, characteristic of all Silurian favosites, and distinguishing them from all Devonian forms which apparently without exception possess linguiform septa. It is possible that more than one species may be here represented. The range in size of the corallites in *F. gothlandica* has been noticed by the writer in his 'Revision of the genera and species of Canadian Palæozoic corals*', 1899-1900, but in the present collection the fragmentary condition of most of the specimens does not admit of characters dependent on the outward form of the corallum being used with any degree of certainty.

Syringopora verticillata, Goldfuss.

A single specimen of this species was obtained at Southampton island. Its corallites average about 4 mm. in diameter and are rather lax and irregular in their growth, the result of which is that the connecting tubes are poorly developed and comparatively distant. This particular mode of growth is admirably shown in specimens, in the possession of the Survey, from the north end of Lake Timiskaming.

Halysites catenularia, L.

Represented by a small corallum, round which has grown a stromatopora. This coral exhibits the structure characteristic of the typical form of the Niagara formation, viz., moderate sized corallites, oval in transverse section with narrow tubules intervening. Four corallites are included in a space of 8 mm.

This form also occurs in the Guelph limestone of Ontario.

A second and particularly interesting specimen was obtained by Mr. Low at Southampton island. It differs from the typical form

* In this report the reader will find extended references to the structure of the majority of the species mentioned in these notes.

in having corallites of noticeably large size, and agrees in this particular with a specimen from the Guelph limestone at Durham, Ont. (J. Townsend, 1884), in the museum of the Survey. The Durham fossil has not the finer details of structure sufficiently well preserved to show the minute tabulæ of the tubules, but in Mr. Low's specimen longitudinal sections of the tubules clearly reveal the highly arched, close set tabulæ within. There are three corallites in a space of 12 mm., as in the Durham specimen, and the tubules have a width of about .75 mm.

Plasmopora foliis, M.-E. and H.

To this species is referred a small specimen showing the inner structure fairly well. The corallites vary in diameter from slightly under to a little over 1 mm., and they are mostly less than their own diameter apart with from one to three tubules in the shortest line, between neighbouring corallites. This species is generally considered to be typical of the Niagara group.

Pycnostylus elegans, Whiteaves.

A few specimens weathered so as to show only the inside of the corallites which vary in diameter from 7 to 15 mm. An interesting feature of these specimens is the preservation of the free edges of the septa which are seen to be denticulated, about seven denticles occurring in a space of 2 mm. A re-examination of the type material reveals the presence of these denticles, although they are poorly preserved. Mr. Low's specimens are referable to the species from the Guelph limestone of Ontario with large corallites (from 13 to 17 mm. in diameter) as in the other and type species from the same horizon and district, the corallites are generally smaller (from 3 to 7 mm. in diameter). As suggested by Dr. Whiteaves in his original description, additional material with corallites of intermediate size may prove the two forms to be specifically identical.

Of the corals from Southampton island, *Streptelasma robustum*, indicates the presence of beds at this locality that belong to the same horizon as those that have been assigned to the Galena-Trenton in the Lake Winnipeg region, and similar beds exposed over a large area to the west of Hudson bay. The beds from which the other species from the same island are derived belong to higher horizons which are, on the evidence of these species, of about the same geological age as those of the Niagara and Guelph formations of Ontario.

CAPE CHIDLEY, HUDSON STRAIT.

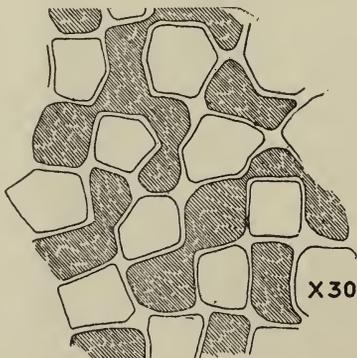
A single coral from this locality is represented by two fragments that have apparently been broken from a larger mass. The exact form of the corallum is unknown, but the structure of the corallites is well preserved and clearly seen in longitudinal and transverse sections. Its structural characteristics are quite different from those of any form known to the writer, and it is regarded as representing a new genus and species named and characterized as follows :—

Labyrinthites. Gen. nov.

Corallum massive, made up of very slender, long, columnar corallites, upwardly directed and parallel, each one connected along the whole of its length with two or three adjacent corallites in tortuous series separated by narrow interspaces. Tabulæ, complete, distant. No septa nor tubules.

Although the manner of growth of this coral resembles somewhat that of *Halysites* it could scarcely be referred to that genus, on account of the absence of septa and tubules, although in *Halysites catenularia* var. *gracilis* tubules are apparently wanting. The small size of the corallites would not necessarily be considered a character sufficient to constitute generic distinction. Another genus, *Fletcheria*, may be considered, but *Labyrinthites* has little in common, with it. In both, the tabulæ are distant and simple, practically the only point of resemblance unless we notice the small size of the corallites of *Fletcheria* and the stated rudimentary condition of its septa.

As the want of septa in the Cape Chidley specimens may be due to imperfect fossilization, *Labyrinthites* is, on account of its mode of growth, provisionally classed with the *Halystidæ*.



Labyrinthites chidlensis. Sp. nov.

Corallum massive, composed of slender, straight, upright corallites with numerous interspaces. Corallites a little less than .33 mm. in average diameter, quadrangular or five or six sided in transverse outline, with rather thick walls. Each corallite coalesces along its entire length with two or three adjacent ones, giving rise to a meandering succession of tubes inclosing narrow spaces not wider than the corallites themselves. In the specimens examined the corallites reach a maximum length of 30 mm. In longitudinal sections tabulæ, in the form of thin, flat, transverse plates across the corallites, are observed, between .5 and 1.5 mm. apart. There are no tubules between contiguous corallites, and the mural union appears to be complete.

Dr. Ami, who is studying the groups of fossils, other than the corals, obtained by Mr. Low at Cape Chidley, informs me that the majority of the Cape Chidley fossils are referable to the Ordovician, whilst two specimens are of Silurian age. The lithological character of the rock in which the coral is preserved appears to more nearly approach that of the Ordovician specimens.

